DOCUMENT RESUME

ED 298 330 CE 050 906

AUTHOR Perkins, Helen
TITLE Reading for Electronics Tutorial Modules. Adult Literacy Project.
INSTITUTION Grayson County Coll., Sherman/Denison, Tex.
SPONS AGENCY Texas Higher Education Coordinating Board, Austin.
PUB DATE 88
NOTE 81p.; For related modules, see CE 050 903 and CE 050 905.
PUB TYPE Guides - Classroom Use - Guides (For Teachers) (052)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Adult Basic Education; Adult Literacy; Basic Skills; *Electronics; Learning Activities; Learning Modules; Literacy Education; *Reading Skills; Trade and Industrial Education; *Vocabulary Skills
IDENTIFIERS Job Related Reading

ABSTRACT

These four modules are designed to improve the basic vocabulary skills of students interested in the field of electronics and to introduce them to some basic vocabulary and information of basic electronics. The exercises, prepared for students reading below the eighth-grade level, provide strategies to help students learn the meaning of new words. The four modules are prefixes, suffixes, roots, and contexts. Each module begins with the appropriate performance objective. Informative material and worksheets are then provided. Answer keys are included. (YLB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

A New Dimension In Learning

ED298330

Adult Literacy Project

Reading For Electronics Tutorial Modules

Written By:
Helen Perkins

CED 50 906

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Florida

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Grayson County College
Sherman-Denison, Texas
1988

BEST COPY AVAILABLE

Project Director
Dr. Alan Scheibmeir

Project Coordinator
Ora Howard

Acknowledgement

This project was funded by the Texas Higher Education Coordinating Board through a grant utilizing funds from the Carl D. Perkins Vocational Educational Act.

Project Number 88104027

Introduction

It has been reported that 33 percent of the adult population is functionally illiterate working at or below the fourth grade level. The need for a successful adult literacy program is well established and verifies the need for new approaches to adult literacy.

The purpose of this project was to produce an integrated program that effectively improves adult literacy, affects employment, enhances employability, and provides career adaptability. The goals directing our efforts were: to design a series of personal/social skills modules; to design a series of modules for teaching reading, writing, and math, and; to design a series of modules providing adults with basic employment skills.

A task force of specialists including community college faculty and counselors, governmental agency representatives, and Coordinating Board personnel worked together to identify client needs, skill competencies needed to meet those needs, and to identify strategies for integration. The integration of these activities centered around the development of material which reinforces and compliments skills taught in each of the three areas. For example, the material used to teach the skills of reading also reinforces skills needed for personal/social development such as assertiveness training. Correspondingly, material used to teach the basic employment module is consistent with the client's chances of learning the competencies.

The modules within this project are appropriate for selected vocational clients as well as non-college attending adults such as those participating in Job Training Partnership Act programs.

VOCABULARY MODULE

INTRODUCTION

To be a successful reader, students need a basic vocabulary. Vocabulary knowledge has a tremendous bearing on reading ability and on most standardized test scores. The exercises in this module will provide the strategies that will help students learn the meaning of new words. When the students have completed these exercises, they will have developed a basic vocabulary for electronics. More importantly, however, they will have learned skills to continue learning new words wherever and whenever they meet them.

OBJECTIVE

To improve the basic vocabulary skills ability of students interested in the field of Electronics and at the same time introduce students to some of the basic vocabulary and information of Basic Electronics.

THE EXERCISES IN THIS MODULE WERE PREPARED FOR STUDENTS READING BELOW THE EIGHTH GRADE LEVEL.

LOCATION OF MATERIALS

The contents of this module will be located in the Reading Lab.

PLACEMENT AND DIAGNOSTIC TEST

The Nelson Denny Reading Test Form E is used to establish the instructional level of each student. The Placement Test is administered to the students before any instruction begins. Any student performing below the eighth grade reading level on the Nelson Denny Reading Test must take the Standard Diagnostic Reading Test. The purpose of the test is to determine which skills the individual student needs to improve.

PROCEDURES

During class sessions the instructor and student helper will answer questions, check individual progress, and generally encourage students. Students may ask the instructor or student helper to pronounce the vocabulary words, prefixes, suffixes, and definitions. Students may work individually or in groups on the exercises at their own pace.

CONTENTS OF MODULE

WORKSHEETS:

Prefixes A-1 -- A-10

Suffixes B-1 -- B-10

Roots C-1 -- C-10

Contexts D-1 -- D-10

Answer Keys included.

Prefixes

PERFORMANCE OBJECTIVE

After completing the exercises in this lesson, the student will be able to increase his vocabulary by using newly learned prefixes to signal meanings of unfamiliar words.

A prefix is a letter or group of letters that appears at the beginning of a word and adds to its meaning. Prefixes are helpful in recognizing new words. Several important prefixes appear over and over again in our language. If you know their meanings you can: (1) sometimes figure out the meaning of a word whose definition you are not certain, and (2) build your vocabulary by using prefixes to signal meanings. We will begin our lesson with a list of words used in Basic Electronics, their prefixes, and the definition of each prefix. Read and study the vocabulary, prefixes, and definitions below.

VOCABULARY	PREFIX	DEFINITION OF PREFIX
1. hydrometer	hydro	liquid
2. dissipation factor	dis	remove-or opposite of
3. transient	trans	across or change
4. semiconductor	semi	half- having characteristics of
5. anode	a	without or not
6. autotransformer	auto	self or same
7. audio	audio	sound

8.	bifilar winding	bi	two
9.	commutator	com	together
10.	ferromagnetic materials	ferro	iron
11.	megohm	mega	one million or larger
12.	multimeter	multi	two or more

MAKING CONNECTIONS

Write each prefix on the left before each definition of the prefix on the right.

PREFIXES	DEFINITIONS
1. mega	_____liquid
2. ferro	_____two
3. com	_____iron
4. bi	_____without or not
5. audio	_____together
6. semi	_____sound
7. trans	_____remove or opposite of
8. auto	_____across or change
9. dis	_____self or same
10. hydro	_____half or having the characteristics of
11. a	_____one million or larger
12. multi	_____two or more

Refer back to the beginning prefix page to check your answers.

DRILL PRACTICE

Use this sheet of paper to cover the definitions and try to give the correct prefixes on page A-3.

PREFIXES IN ACTION

Each word below contains one of the prefixes explained in this lesson. If you cannot figure out the meaning of the word from the prefix and the base word, look up the word on the definition page of this lesson (A-7). Write the definition in the space provided. After each definition tell how the prefix relates to the meaning of the word.

1. hydrometer _____

_____

_____

2. dissipation factor _____

_____

_____

3. transient _____

_____

_____

4. semiconductor _____

5. anode _____

6. autotransformer _____

7. audio _____

8. bifilar winding _____

9. commutator _____

10. ferromagnetic materials _____

11. megohm _____

12. multi _____

PREFIXES IN YOUR VOCABULARY

Under each prefix below write three or more words that you have seen, words that begin with the prefix indicated. Check your dictionary for assistance. Try not to repeat any that appear at the beginning of this lesson. How does the prefix in each word contribute to (add to) the meaning of the word? THINK ABOUT IT.

1. multi multiply (example) _____ _____
   _____ _____ _____
   _____ _____ _____

2. mega _____ _____ _____
   _____ _____ _____
   _____ _____ _____

3. ferro _____ _____ _____
   _____ _____ _____
   _____ _____ _____

4. com _____ _____ _____
   _____ _____ _____

5. bi

6. audio

7. a

8. semi

9. trans

10. dis

11. hydro _____ _____ _____

_____ _____ _____

_____ _____ _____

12. auto _____ _____ _____

_____ _____ _____

_____ _____ _____

KEY WORDS

When trying to learn the meaning of a new word, try not to memorize the whole definition. Key words in the definition are easier to remember, and they will help you best understand the unfamiliar words. Key words are clues to help you remember and understand the definition of the word.

EXAMPLE:

WORD	DEFINITION
choke	Another name for an inductor or coil, especially one that chokes or blocks high frequencies.

The key words are underlined. When studying the word choke, remember the key words; and they will help you add the new word to your vocabulary.

If help is needed on this assignment, see the instructor or student helper.

DEFINITIONS FOR BASIC ELECTRONICS VOCABULARY WITH PREFIXES

Underline the key words in each definition. If help is needed on this assignment, see the instructor or student helper. The first key word has been underlined for you.

1. hydrometer — A device used to measure specific gravity, esp. a sealed, graduated tube, weighted at one end that sinks in a fluid to a depth used as a measure of the fluid's specific gravity

2. dissipation factor — An indication of how much power is dissipated (lost) in a capacitor or coil at a given frequency

3. transient — A short-lived change in circuit conditions from one steady state to another

4. semiconductor — A material, such as silicon or germanium, that generally has four valence electrons and a conductor or an insulator (but closer to that of a conductor)

5. anode — The terminal of a device (such as a battery) that loses electrons into the external circuit during normal operation. The negative electrode of a battery is an anode.

6. autotransformer — A transformer that uses one coil for both primary and secondary

7. audio — The range of sound frequencies detectable by the human ear, nominally 20 Hz-20 kHz

8. bifilar winding — A double winding, consisting of two wires wound side-by-side to reduce inductive effects (in a resistor) or to produce close coupling between two coils

9. commutator — Copper segments on the rotor of a motor or generator that switch current at the correct instant to generate direct current or permit a motor to run from a source of direct current

10. ferromagnetic materials — Materials that have a permeability hundreds of times greater than that of free space, resembling the magnetic properties

of iron

11. megohm One million ohms

12. multimeter An instrument designed to measure two or more electrical quantities. Often portable

VOCABULARY QUIZ

Name _____

Match the words on the left with their meanings on the right by writing the letters a. through l. on the lines.

_____ 1.	hydrometer	a. one million ohms
_____ 2.	dissipation factor	b. a transformer that uses one coil for both primary and secondary
_____ 3.	commutator	c. an instrument designed to measure two or more electrical quantities
_____ 4.	audio	d. an indication of how much power is dissipated (lost) in a capacitor or coil at a given frequency
_____ 5.	ferromagnetic materials	e. the range of sound frequencies detectable by the human ear, nominally 20 Hz-20 kHz
_____ 6.	anode	f. a device used to measure specific

gravity

_____ 7. bifilar winding

g. copper segments on the rotor of a motor or generator that switch current at the correct instant to generate direct current or permit a motor to run from a source of direct current

_____ 8. multimeter

h. a short lived change in circuit conditions from one steady state to another

_____ 9. semiconductor

i. materials that have a permeability hundreds of times greater than that of free space, resembling the magnetic properties of iron

_____10. transient

j. a material, such as silicon or germanium, that generally has four valence electrons and a conductor or an insulator (but closer to that of a conductor)

_____11. autotransformer

k. a double winding, consisting of two wires wound side-by-side to reduce inductive effects (in a resistor) or to produce close coupling between two coils

_____12. megohm	1.	the terminal of a device (such as a battery) that loses electrons into the external circuit during normal operation. The negative electrode of a battery is an anode.

Answers may be found on Page A-10.

Vocabulary Test ---- Answer Key

1. f
2. d
3. g
4. e
5. i
6. l
7. k
8. c
9. j
10. h
11. b
12. a

Suffixes

VOCABULARY MODULE

INTRODUCTION

To be a successful reader, students need a basic vocabulary. Vocabulary knowledge has a tremendous bearing on reading ability and on most standardized test scores. The exercises in this module will provide the strategies that will help students learn the meaning of new words. When the students have completed these exercises, they will have developed a basic vocabulary for electronics. More importantly, however, they will have learned skills to continue learning new words wherever and whenever they meet them.

OBJECTIVE

To improve the basic vocabulary skills ability of students interested in the field of Electronics and at the same time introduce students to some of the basic vocabulary and information of Basic Electronics.

THE EXERCISES IN THIS MODULE WERE PREPARED FOR STUDENTS READING BELOW THE EIGHTH GRADE LEVEL.

LOCATION OF MATERIALS

The contents of this module will be located in the Reading Lab.

PLACEMENT AND DIAGNOSTIC TEST

The Nelson Denny Reading Test Form E is used to establish the instructional level of each student. The Placement Test is administered to the students before any instruction begins. Any student performing below the eighth grade reading level on the Nelson Denny Reading Test must take the Standard Diagnostic Reading Test. The purpose of the test is to determine which skills the individual student needs to improve.

PROCEDURES

During class sessions the instructor and student helper will answer questions, check individual progress, and generally encourage students. Students may ask the instructor or student helper to pronounce the vocabulary words, prefixes, suffixes, and definitions. Students may work individually or in groups on the exercises at their own pace.

CONTENTS OF MODULE

WORKSHEETS:

Prefixes A-1 -- A-10

Suffixes B-1 -- B-10

Roots C-1 -- C-10

Contexts D-1 -- D-10

Answer Keys included.

PERFORMANCE OBJECTIVE

After completing the exercises in this lesson, the student will have some understanding of suffixes and their use. Students will utilize suffixes to change the functions of words.

A suffix is a letter or group of letters that is added to the end of a base word. Suffixes change words to nouns, adjectives, verbs, and adverbs. We will begin our lesson with a list of words used in Basic Electronics, their suffixes, and the definition of each suffix. Study and read the vocabulary, suffixes, and definitions below.

VOCABULARY	SUFFIXES	DEFINITION OF SUFFIX
1. amm<u>eter</u>	meter	measuring device
2. circuit break<u>er</u>	er	one that performs a specified action
3. incandesc<u>ent</u> lamp	ent	causing a specified action
4. magnet<u>ize</u>	ize	make into
5. stat<u>ic</u>	ic	pertaining or relating to

6.	electromotive force	ive	quality of
7.	instantaneous value	ous	full of
8.	permeable	able	able to be
9.	germanium	ium	chemical element or group
10.	waveform	form	having the form of
11.	attenuation	tion	action; process
12.	winding	ing	one having a specified quality or nature

MAKING CONNECTIONS

Write each suffix on the left before each definition of the suffix on the right.

SUFFIXES		DEFINITIONS.
1.	meter	_____ make into
2.	ive	_____ one that performs a specified action
3.	ent	_____ action process
4.	ize	_____ causing a specified action
5.	form	_____ measuring device
6.	able	_____ quality of
7.	ous	_____ full of
8.	ic	_____ one having a specified quality or nature
9.	er	_____ chemical element or group
10.	tion	_____ able to be
11.	ing	_____ pertaining or relating to
12.	ium	_____ having the form of

Refer back to the beginning suffix page to check your answers.

DRILL PRACTICE

Use this sheet of paper to cover the definitions and try to give the correct prefixes on page B-3.

SUFFIXES IN ACTION

Each word below contains one of the suffixes explained in this lesson. Write the definitions of the words in the spaces provided. You may look up the word on the definition page of this lesson (B-7). How does the suffix change how the word is used? THINK ABOUT IT.

1. ammeter _____

_____

_____

2. permeable _____

_____

_____

3. circuit breaker _____

_____

_____

4. incandescent lamp _____

_____

_____

5. magnetize _____

_____

6. germanium _____

7. static _____

8. electromotive _____

9. instantanious value _____

10. attenuation _____

11. waveform _____

12. winding _____

SUFFIXES IN YOUR VOCABULARY

Under each suffix below write two words that you have seen with the suffix indicated. Check your dictionary for assistance. Try not to repeat any that appeared at the beginning of this lesson. How does the suffix change the function of the word? THINK ABOUT IT.

1.	meter	kilometer (example)__	_____
2.	ive	_____	_____
3.	ent	_____	_____
4.	ize	_____	_____
5.	form	_____	_____
6.	able	_____	_____
7.	ous	_____	_____
8.	ic	_____	_____
9.	er	_____	_____
10.	tion	_____	_____
11.	ing	_____	_____
12.	ium	_____	_____

KEY WORDS

When trying to learn the meaning of a new word, try not to memorize the whole definition. Key words in the definition are easier to remember, and they will help you best understand the unfamiliar words. Key words are clues to help you remember and understand the definition of the word.

EXAMPLE:

WORD	DEFINITION
choke	Another name for an inductor or coil, especially one that chokes or blocks high frequencies.

The key words are underlined. When studying the word choke, remember the key words; and they will help you add the new word to your vocabulary.

If help is needed on this assignment, see the instructor or student helper.

DEFINITIONS FOR BASIC ELECTRONICS VOCABULARY WITH SUFFIXES

Underline the key words in each definition. If help is needed on this assignment, see the instructor or student helper. The first two have been underlined for you.

1. ammeter An instrument used to measure electrical current.

2. circuit breaker A resettable thermal or electromagnetic switch that opens a circuit when the circuit current exceeds a selected value

3. incandescent lamp A device that produces light as a result of heating a filament to a white-hot incadescence

4. magnetize To make a magnetic material act as a magnet by aligning its magnetic domains

5. static A fixed, nonvarying condition: without motion

6. electromotive force The open circuit voltage produced by

an electrical source (such as a battery or generator), that causes current to flow in a complete circuit

7. instantaneous value — The value of a variable quantity at a given instant of time

8. permeable — A measure of the ease with which magnetic lines of force can be established in a material

9. germanium — A semiconductor material used to make diodes and transistors

10. waveform — The shape of a wave obtained when instantaneous values of a varying quantity are plotted against time

11. attenuation — The process of reducing the strength of a signal

12. winding — The coil or turns of wire on an inductor or transformer

VOCABULARY QUIZ

Match the words on the left with their meanings on the right by writing the letters m. through x. on the lines.

_____ 1.	ammeter	m.	the coil or turns of wire on an inductor or transformer
_____ 2.	winding	n.	a device that produces light as a result of heating a filament to a white-hot incadescence
_____ 3.	permeable	o.	the process of reducing the strength of a signal
_____ 4.	electromotive force	p.	a resettable thermal or electromagnetic switch that opens a circuit when the circuit current exceeds a selected value

_____ 5.	magnetize	q.	the value of a variable quantity at a given instant of time
_____ 6.	waveform	r.	a semiconductor material used to make diodes and transistors
_____ 7.	instantaneous value	s.	the shape of a wave obtained when instantaneous values of varying quantity are plotted against time
_____ 8.	attenuation	t.	a fixed, nonvarying condition without motion
_____ 9.	circuit breaker	u.	to make a magnetic material act as a magnet by aligning its magnetic domains
_____10.	static	v.	the open circuit voltage produced by an electrical source (such as a battery or generator) that causes current to flow in a complete circuit

_____11.	germanium	w.	an instrument used to measure electrical current
_____12.	incandescent lamp	x.	a measure of the ease with which magnetic lines of force can be established in a material

ANSWERS MAY BE FOUND ON PAGE B-10.

VOCABULARY TEST -- ANSWER KEY

1. w
2. m
3. x
4. v
5. u
6. s
7. q
8. o
9. p
10. t
11. r
12. n

Roots

VOCABULARY MODULE

INTRODUCTION

To be a successful reader, students need a basic vocabulary. Vocabulary knowledge has a tremendous bearing on reading ability and on most standardized test scores. The exercises in this module will provide the strategies that will help students learn the meaning of new words. When the students have completed these exercises, they will have developed a basic vocabulary for electronics. More importantly, however, they will have learned skills to continue learning new words wherever and whenever they meet them.

OBJECTIVE

To improve the basic vocabulary skills ability of students interested in the field of Electronics and at the same time introduce students to some of the basic vocabulary and information of Basic Electronics.

THE EXERCISES IN THIS MODULE WERE PREPARED FOR STUDENTS READING BELOW THE EIGHTH GRADE LEVEL.

LOCATION OF MATERIALS

The contents of this module will be located in the Reading Lab.

PLACEMENT AND DIAGNOSTIC TEST

The Nelson Denny Reading Test Form E is used to establish the instructional level of each student. The Placement Test is administered to the students before any instruction begins. Any student performing below the eighth grade reading level on the Nelson Denny Reading Test must take the Standard Diagnostic Reading Test. The purpose of the test is to determine which skills the individual student needs to improve.

PROCEDURES

During class sessions the instructor and student helper will answer questions, check individual progress, and generally encourage students. Students may ask the instructor or student helper to pronounce the vocabulary words, prefixes, suffixes, and definitions. Students may work individually or in groups on the exercises at their own pace.

CONTENTS OF MODULE

WORKSHEETS:

Prefixes A-1 -- A-10

Suffixes B-1 -- B-10

Roots C-1 -- C-10

Contexts D-1 -- D-10

Answer Keys included.

PERFORMANCE OBJECTIVE

After completing the exercises in this lesson, the student will be able to increase his vocabulary by using the meanings of newly learned roots to signal meanings of unfamiliar words.

Roots are the base parts of words that often name a thing or action. Roots may be found in any part of a word. Roots are helpful in understanding new words because roots appear over and over again in our language. We will begin our lesson with a list of words used in Basic Electronics, their roots, and the definition of each root. Study and read the vocabulary, roots, and definitions below.

VOCABULARY	ROOT	DEFINITION OF ROOT
1. oscilloscope	scope	seeing, watch
2. polyphase	poly	many
3. capacity	cap	take, seize
4. ohmmeter	ohm	the unit of resistance
5. equivalent circuit	equi	equality
6. photovaltaic cell	phot	light
7. primary cell	prim	first
8. amphere-turn	amphere	basic unit of electrical current
9. alternating current	alter	other
10. emitter	mitt	to send
11. electrode	electr	electricity
12. thermocouple	thermo	heat

MAKING CONNECTIONS

Write each root on the left before each definition of the root on the right.

ROOTS		DEFINITIONS
1.	scope	_____ many
2.	poly	_____ first
3.	cap	_____ other
4.	ohm	_____ electricity
5.	equi	_____ basic unit of electrical current
6.	phot	_____ take, seize
7.	pri	_____ equality
8.	amphere	_____ to send
9.	mitt	_____ heat
10.	alter	_____ the unit of resistance
11.	electr	_____ seeing, watch
12.	thermo	_____ light

Refer back to the beginning root page to check your answers.

DRILL PRACTICE

Use this sheet of paper to cover the definitions and try to give the correct root on page C-3.

ROOTS IN ACTION

Each word below contains one of the roots explained in this lesson. If you cannot figure out the meaning of the word from the root, look up the word on the definition page of this lesson (C-7). Write the definition in the space provided. After each definition tell how the root relates to the meaning of the word.

1. oscilloscope _____

_____

_____

2. polyphase _____

_____

_____

3. capacity _____

_____

_____

4. ohmmeter _____

5. equivalent circuit _____

6. photovaltaic cell _____

7. primary cell _____

8. amphere-turn _____

9. alternating current _____

10. emitter _____

11. electrode _____

12. thermocouple _____

ROOTS IN YOUR VOCABULARY

Under each root below write three words that you have seen--words that begin with the root indicated. Check your dictionary for assistance. Try not to repeat any that appear at the beginning of this lesson. How does the root in each word contribute to (add to) the meaning of the word? THINK ABOUT IT.

1. scope telescope (example)_____ _____
2. poly _____ _____ _____
3. cap _____ _____ _____
4. ohm _____ _____ _____
5. equi _____ _____ _____
6. phot _____ _____ _____
7. prim _____ _____ _____
8. amphere _____ _____ _____
9. alter _____ _____ _____
10. mitt _____ _____ _____
11. electr _____ _____ _____
12. thermo _____ _____ _____

KEY WORDS

When trying to learn the meaning of a new word, try not to memorize the whole definition. Key words in the definition are easier to remember, and they will help you best understand the unfamiliar words. Key words are clues to help you remember and understand the definition of the word.

EXAMPLE:

WORD	DEFINITION
choke	Another name for an inductor or coil, especially one that chokes or blocks high frequencies

The key words are underlined. When studying the word choke, remember the key words; and they will help you add the new word to your vocabulary.

If help is needed on this assignment see the instructor or

student helper.

DEFINITIONS FOR BASIC ELECTRONICS VOCABULARY WITH ROOTS

Underline the key words in each definition. If help is needed on this assignment, see the instructor or student helper. The first one has been underlined for you.

1. oscilloscope — An instrument that displays on its screen the manner in which a waveform varies over time

2. polyphase — A circuit or supply that uses more than one phase of alternating current

3. capacity — The ability of a battery to store electrical charge and energy

4. ohmmeter — An instrument that measures resistance

5. equivalent circuit — A circuit that represents a more complicated circuit but permits easier analysis

6. photovaltaic cell — A silicon PN junction that produces voltage from light energy. A solar cell

7. primary cell — A cell (battery) that cannot be recharged to its initial state

8. amphere-turn — The basic unit of magnetizing force (magnetomotive force) caused by current flowing through a coil

9. alternating current — A current that continuously reverses direction because of the continuously reversing polarity of an alternating voltage

10. emitter — One of the three terminals of BJT that emits the majority carriers

11. electrode — Conductor or terminal, usually metallic, through which an electric current enters or leaves

12. thermocouple — A pair of dissimilar metals joined together so that an emf is generated at the open ends

when the junction is heated

VOCABULARY QUIZ

NAME_____

Match the words on the left with their meanings on the right by writing the letters a. through l. on the lines.

____ 1.	oscilloscope	a.	an instrument that measures resistance
____ 2.	capacity	b.	a cell (battery) that cannot be recharged to its initial state
____ 3.	emitter	c.	a pair of dissimilar metals joined together so that an emf is generated at the open ends when the junction is heated
____ 4.	thermocouple	d.	an instrument that displays on its screen the manner in which a waveform varies over time
____ 5.	alternating current	e.	the ability of a battery

to store electrical charge and energy

____ 6. primary cell

f. conductor or terminal, usually metallic, through which an electrical current enters or leaves

____ 7. electrode

g. a circuit that represents a more complicated circuit, but permits easier analysis

____ 8. amphere-turn

h. a silicon PN junction that produces voltage from light energy. A solar cell

____ 9. ohmmeter

i. a current that continuously reverses direction because of the continuously reversing polarity of an alternating voltage

____10. photovaltaic cell

j. a circuit or supply that uses more than one phase of alternating current

____11. equivalent circuit

k. the basic unit of magnetizing

force (magnetomotive force) caused by current flowing through a coil

____12. polyphase

1. one of the three terminals of BJT that emits the majority carriers

ANSWERS MAY BE FOUND ON PAGE C-10.

VOCABULARY TEST--ANSWER KEY

1. d
2. e
3. l
4. c
5. i
6. b
7. f
8. k
9. a
10. h
11. g
12. j

Contexts

VOCABULARY MODULE

INTRODUCTION

To be a successful reader, students need a basic vocabulary. Vocabulary knowledge has a tremendous bearing on reading ability and on most standardized test scores. The exercises in this module will provide the strategies that will help students learn the meaning of new words. When the students have completed these exercises, they will have developed a basic vocabulary for electronics. More importantly, however, they will have learned skills to continue learning new words wherever and whenever they meet them.

OBJECTIVE

To improve the basic vocabulary skills ability of students interested in the field of Electronics and at the same time introduce students to some of the basic vocabulary and information of Basic Electronics.

THE EXERCISES IN THIS MODULE WERE PREPARED FOR STUDENTS READING BELOW THE EIGHTH GRADE LEVEL.

LOCATION OF MATERIALS

The contents of this module will be located in the Reading Lab.

PLACEMENT AND DIAGNOSTIC TEST

The Nelson Denny Reading Test Form E is used to establish the instructional level of each student. The Placement Test is administered to the students before any instruction begins. Any student performing below the eighth grade reading level on the Nelson Denny Reading Test must take the Standard Diagnostic Reading Test. The purpose of the test is to determine which skills the individual student needs to improve.

PROCEDURES

During class sessions the instructor and student helper will answer questions, check individual progress, and generally encourage students. Students may ask the instructor or student helper to pronounce the vocabulary words, prefixes, suffixes, and definitions. Students may work individually or in groups on the exercises at their own pace.

CONTENTS OF MODULE

WORKSHEETS:

Prefixes A-1 -- A-10

Suffixes B-1 -- B-10

Roots C-1 -- C-10

Contexts D-1 -- D-10

Answer Keys included.

PERFORMANCE OBJECTIVE:

After completing the exercises in this lesson, the student will be able to increase his vocabulary by using context clues to figure out the meanings of unfamiliar words.

The Context is the part of the sentence or paragraph that surrounds the word and makes it meaningful. The context gives clues that can be used to help you figure out the meaning of an unknown word. When using context clues your flow of thought is not interrupted by looking up words in the dictionary.

For example:

The family arriving from Vietnam was indigent; they could not pay for food.

(1) Define indigent: _____

_____

We know that the lack of money is the most likely cause of not being able to pay for food. Having no money is a likely definition for indigent.

It was their first altercation; Mary had never argued with her husband before.

(2) Define altercation: _____

"Altercation: doesn't exactly mean "argument," but it is very close in meaning.

Sometimes a synonym, a word that means the same or almost the same, is used with the unfamiliar word. The synonym gives a definition, which although not exact in meaning, is very close.

FOLLOW THE DIRECTIONS PROVIDED WITH EACH SENTENCE ON THE FOLLOWING PAGES.

FOLLOW THE DIRECTIONS GIVEN FOR EACH SENTENCE.

1. Once you were on my side; now you are my adversary.

   Define adversary: _____

   _____

   What two words provide a clue? _____ _____

2. The kilowatt-hour is the basic unit the utility company uses to calculate your monthly electric bill.

   Define kilowatt-hour: _____

   _____

3. Cats should be confined to the house.

   Define confined: _____

   _____

4. Even the most experienced soldiers became sickened at the sight of the carnage on the battlefield.

   What kind of sight would cause an experienced soldier to become sick? _____

   Define carnage: _____

   _____

5. Misnomers are sometimes a source of amusement--as when someone with black hair and dark skin is called "Blondie."

   Underline the example of a misnomer.

   Define misnomer: _____

   _____

6. We could not reach total agreement on the question (problem) because we were a very diverse group.

   Define diverse: _____

   _____

7. A process called voltage division can be used to provide different voltages in a series circuit.

   Define voltage division: _____

   _____

8. This includes a chapter on ac measuring instruments, concentrating on the oscilloscope and its use.

   What is the purpose of an oscilloscope?_____

   _____

9. The old misconception that birds have a mysterious sense of direction of some sort or built-in compass has been thrown out

by most modern scientists.

Define misconception: _____

_____

10. The negatively charged side is said to have a negative potential; the positively charged side a _____ potential.
What is the opposite of negative? _____

11. When an instrument is used for measurement, it is expected that application of the instrument to the circuit will not change conditions in that circuit.
Define application: _____

_____

12. To make the pointer deflect in only one direction the current must be made to flow through the movement in one direction.
Define deflect: _____

_____

13. Lincoln was a man of humble birth. He was born in a log cabin in Kentucky, and as a boy he studied his lessons by candlelight. He enjoyed few of life's material comforts.
Define humble: _____

_____

14. One arm is versatile--capable of moving up, down and around.

Define versatile: _____

_____

ANSWER KEY

1. adversary -- enemy

2. kilowatt-hour -- a common unit of energy used by power companies to compute electricity usage bills

3. confined -- to keep within limits; shut in

4. carnage -- men killed in battle

5. misnomer -- an error in naming a person or place

6. diverse -- unlike; different

7. voltage division -- a process used to provide different voltages in a series circuit

8. oscilloscope -- an instrument that displays on its screen the manner in which a waveform varies over time

9. misconception -- a mistaken idea or notion

10. the opposite of negative -- positive

11. application -- the act of using or adapting for a special purpose

12. deflect -- to turn aside or cause to turn aside

13. humble -- not grand; of low rank

14. versatile -- able to do many things well

Sources:

Electricity and Electronics, Allen Mottershear, Copyright 1986, John Wiley and Sons, Inc.

The American Heritage Dictionary, Second College Edition, Houghton Mifflin Company.